IFF-21

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appellants: Lou et al.

Serial No.: 10/054,239 Art Unit: 1761

Filed : October 22, 2001 Examiner: L.A. Wong

For : Hydroxypropyl Cellulose Encapsulation Material

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September 27, 2004

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JOSEPH F. LEIGHTNER

(Name of applicant, assignee, or Registered Representative)

(Signature)

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September 27, 2004

(Date of Signature)

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Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

**APPEAL BRIEF**

Dear Sir:

In accordance with the provisions of 37 CFR §1.191, Appellant filed a timely Notice of Appeal in the above application on August 3, 2004, from the Final Rejection made by the Examiner in the Office Action dated July 3, 2004. Three copies of the Appeal Brief are enclosed. Authorization to charge Deposit Account 12-1295 for the costs for filing this brief in the amount of $330.00, and any other fees required by this paper is hereby granted.

**(1) Real Party in Interest**

The real party in interest in the application in this appeal is Appellants' assignee: International Flavors & Fragrances Inc., a New York corporation.

**(2) Related Appeals and Interferences**

There are no related appeals, interferences or related applications currently pending.

**(3) Status of the Claims**

Claims 1-17 are the claims on appeal, a copy of which are attached hereto in the Appendix to this Brief. No claims stand allowed in this application.

**(4) Status of Amendments**

An Office Action was mailed on September 15, 2003. An Amendment was filed with a petition for a one-month extension of time on January 12, 2004. A Notice of Non-Compliant Amendment was mailed on February 3, 2004. A response correcting the Non-Compliant Amendment was filed on February 11, 2004. The claims were Finally Rejected in an Office Action dated May 3, 2004. No amendment was filed in response to the Final Office Action. A Notice of Appeal was filed on August 3, 2004. The claims as presented are the same as presented in the Amendment filed on February 11, 2004.

**(5) Summary of the Invention**

The present invention claims recite encapsulation materials suitable for encapsulating flavors or fragrances. As is well appreciated in the art, flavor and fragrance materials are inherently volatile materials and during processing and other manufacturing processes used in manufacturing consumer and food products, the flavor or fragrance materials are lost due to the use of high temperatures used

in processing these materials. Encapsulation technologies have been developed in part to protect flavor and fragrance ingredients and minimize losses during processing thereby providing ample flavor or fragrance to the consumer when they use the flavor or fragrance-containing product.

The present invention is directed to the discovery that the incorporation of the recited hydroxypropyl cellulose, at the recited levels, with the recited viscosity values, improves the temperature profile properties of the encapsulation materials, thereby providing additional protection to flavor or fragrance materials encapsulated therein.

**(6) Issues on Appeal**

Whether the inventions of claim 1-17 are obvious under 35 U.S.C. 103 are obvious in view of Porzio in view of Cherukuri for the reasons set forth in the Office Action of September 15, 2003 and affirmed in the Office Action finally Rejecting the claims mailed on May 3, 2004.

**(7) Grouping of Claims**

Appellants believe that all of their claims are patentable over the prior art. For purposes of this Appeal, claims 1- 17 stand together for purposes of this appeal.

**(8) Argument**

The present invention and the Porzio disclosure consistently disclose that the formation of a glassy encapsulation matrix requires the careful selection of materials and the elimination of materials that would adversely effect the combination. Appellants respectfully submit that a person with skill in the art would appreciate the selectivity and complexity of forming a high temperature-resistant encapsulation (glassy matrix) of the present invention. Appellants respectfully submit that a person would not find motivation to incorporate hydroxypropyl cellulose

(HPC) with the recited properties and quantity, from another disclosure which is not directed to the formation of a glassy matrix.

In the creation of a glassy matrix the proper selection of ingredients, at the correct level, is important for proper functional characteristics of the encapsulation. For example, as both the Porzio and the present application describe, the water content must be carefully maintained, because the improper water level will reduce the functional properties of the encapsulation materials. The point of these disclosures is that it is very important to carefully select the proper materials and the correct level of materials because improper selection will adversely effect the combination. Appellants respectfully submit that the Examiner's suggestion that HPC has been used in encapsulation and it would be obvious to incorporate HPC into the Porzio combination overlooks the critical balance of ingredients required to make the glassy matrix of the present invention and as recited in Porzio.

Support for Appellants' position is amply provided in Porzio, since it discloses various combinations of materials, the combinations being specific recitation of material mixtures. Porzio's specific combinations of ingredients, recited in column 5, as specific combinations (a) - (g), provides those with ordinary skill in the art with an appreciation of the combination of ingredients. Appellants further submit that a person with skill in the art after reading the careful disclosure and range of ingredients used to make Porzio's glassy matrix would not be motivated to add HPC as disclosed by Cherukuri. The Cherukuri disclosure is fairly characterized as a disclosure of multiple layer encapsulation technology without disclosing the creation of a glassy matrix. Therefore Appellants respectfully submit that Cherukuri would not lead one with ordinary skill in the art to substitute HPC for other cellulose materials for the creation of a glassy matrix encapsulation material.

Appellants respectfully submit that the Porzio disclosure describes as critical, the selection of ingredients used, and level of ingredients in the encapsulations. Appellants submit that the combination of disclosures relied upon by the Examiner does not suggest the incorporation of HPC in the present invention.

In addition, the claims recite a viscosity and level of HPC to be used in the present invention. There is no disclosure or suggestion of the use of this type of HPC used in the present invention found in either disclosure. Appellants respectfully suggest the recited level can not be fairly suggested by the combination of references relied upon by the Examiner.

In addition, the claimed invention recites that the encapsulation must be capable of protecting the flavor or fragrance materials at the elevated temperatures recited in the claims. There is no disclosure or suggestions of this element in the invention in either disclosure.

Appellants respectfully suggest that the Examiner in rejecting the claims is applying an obvious to try approach, stating that a person with ordinary skill in the art could substitute one cellulose material for another. Appellants respectfully note that the pending application and the Porzio disclosure, share a common co-inventor - Lewis M. Popplewell. Dr. Popplewell was previously employed by McCormick & Company, Inc. (assignee of the Porzio disclosure) and is now employed by International Flavors & Fragrances Inc., (assignee of the present application).

The filing of the present application, using the recited hydroxypropyl cellulose with recited viscosity characteristic, instead of the disclosed methyl cellulose and hydroxypropyl methyl cellulose, is clear evidence that the present invention was not an obvious variation of the earlier work. Porzio and Popplewell disclose specific examples, listed as (a) to (g) of modified starches that form a desired glassy matrix. It

clearly would have been a simple addition to the Porzio disclosure to add HPC to the list of food polymers provided in column 10, lines 29-38, had there been an expectation of success in the substitution.

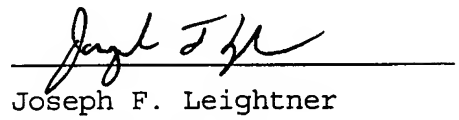
Appellants respect that the Examiner's approach fails to recognize the invention with all of the recited elements or the unexpected property of protecting the encapsulated material at the elevated temperature recited in the claims.

For the above reasons, Appellants respectfully submit that using the proper analysis of obviousness, that the claimed invention including every element is viewed as a whole, is not suggested by the combination of disclosures relied upon by the Examiner. Appellants respectfully submit that a person with ordinary skill in the art would not find the invention obvious for the reasons set forth above.

Appellants respectfully submit that the claims as amended are in full compliance with all statutory provisions and the reasons for rejection of record are no longer applicable. Early and favorable consideration of the pending claims is earnestly solicited.

For the above reasons, Appellants respectfully request that the rejection of record be reversed and that all claims on appeal be allowed.

Respectfully submitted,



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## APPENDIX

**Claims on Appeal (Claims 1-17):**

1. A composition comprising from about 0.1 to about 20 weight percent of a flavor or fragrance material encapsulated in matrix comprising from about 60 to about 99.5 weight percent of materials selected from the group consisting of sugars; maltodextrin having 5 to 20 dextrose equivalent (DE), fats, silicone dioxide, polyhydric alcohols, corn syrup solids, starch, modified starches, emulsifiers and food acids; and from about 0.5 to about 20 weight percent of hydroxypropyl cellulose, said hydroxypropyl cellulose having a viscosity of from about 3 to about 100,000 centipoise; wherein the flavor or fragrance material remains encapsulated at temperatures greater than about 130°C.

2. The composition of claim 1 wherein matrix is from about 5 to about 95 weight percent.

3. The composition of claim 2 wherein the maltodextrin has a dextrose equivalent of from 5 to about 15.

4. The composition of claim 3 wherein the maltodextrin has a dextrose equivalent of from 10 to about 14.

5. The composition of claim 1 wherein the level of hydroxypropyl cellulose is from about 2 to about 10 weight percent.

6. The composition of claim 1 wherein the composition has a Tg of greater than 35°C.

7. The matrix of claim 1 wherein the matrix comprises from about 5 to about 75 weight percent starch.

8. The matrix of claim 1 wherein the matrix comprises from about 1 to about 80 weight percent of a food acid.

9. The composition of claim 1 wherein the flavor or fragrance material remain encapsulated at temperatures greater than about 140°C.

10. The composition of claim 1 wherein the flavor or fragrance material remain encapsulated at temperatures greater than about 150°C.

11. The composition of claim 9 wherein the hydroxypropyl cellulose level is from about 2 to about 10 weight percent.

12. The composition of claim 11 wherein the hydroxypropyl cellulose is from about 3 to about 5 weight percent.

13. The composition of claim 10 wherein the hydroxypropyl cellulose level is from about 2 to about 10 weight percent.

14. The composition of claim 13 wherein the hydroxypropyl cellulose level is from about 3 to about 5 weight percent.

15. The composition of claim 1 wherein the hydroxypropyl cellulose has a viscosity of from about 4,000 to about 15,000 centipoise.

16. The composition of claim 15 wherein the hydroxypropyl cellulose level is from about 2 to about 10 weight percent.

17. The composition of claim 16 wherein the hydroxypropyl cellulose level is from about 3 to about 5 weight percent.